

Frequently Asked Questions

Constraint Management Pathfinder

12th April 2021



FAQ

1. Why are distribution excluded from this service?

The ESO requires resilience and fast acting response i.e. the generator must be disconnected without fail. To ensure this,

1. duplicate communication channels are required as per code between the intertrip scheme and the generator intending to participate in the service. This is already achieved on the transmission network as per design requirement however, this is not expected on the distribution network.
2. The requirement can be driven by a stability constraint. If so, the generator will need to be tripped off within 150ms. This type of fast acting protection is readily available on the transmission network due to the requirement and not always on the distribution network.
3. Working with the TOs, the ESO has found that the best opportunity to meet the connection requirement by October 2022 is by running the comms link between the intertrip scheme and the nearest transmission circuit breaker which would only disconnect the generator and not the other customers behind that transmission circuit breaker. With this the generator would not also have to modify their connection which saves time and cost.
4. Also, there are a limited number of slots on the intertrip scheme and the ESO is working with the TO to understand how many customers can be connected to the scheme. This means parties will need to be large so that we can connect sufficient volume across the scheme and to get the service.

Due to all these factors and the need to take action to reduce network congestion costs on this constraint boundary, we are prioritising transmission connected parties only in this round.

2. When will the service be open to Distribution connected units?

As soon as the limitations in the above answer (#1) are resolved, distributed connected parties can participate in this service. The ESO is already working with the parties to understand the nature of their connection and how distribution connected generation can participate in this service however, they are exempt from this tender but are encouraged to submit an Expression of Interest (EOI) to allow the ESO to evolve the service.

3. How can distribution connected parties participate in this round?

We would encourage distribution connected parties to submit an expression of interest so the ESO can learn the various connection types on the system. Since, every connection is different and if the connection meets the criteria being sought and if the ESO does not procure sufficient intertrip volume from transmission connected solutions then, distribution solutions could be a part of the service too in future years.

4. Is there any de-loading/ramp down to 0MW gradually option available rather than tripping off?

No, the intertrip will instantly operate the transmission owner circuit breaker and disconnect the generator from the system.

5. Why does the generator need to be tripped off in 150ms?

The ESO needs to secure the system for various faults and for B6, the limit can be caused by thermal/stability issues. If the type of constraint is stability, i.e. in realtime studies show generator rotor angle issues for the amount of power being exported, then 150ms disconnection becomes critical. This is not as critical if the issue is driven by thermal reason i.e. the power flow exceeding the rating of a circuit or asset alone.

With B6, the limit is driven by both thermal and stability depending on system conditions and the transfer between Scotland and England. To secure for both instances, the requirement of 150ms is placed on the procurement of services.

6. If tripped, how will the duration of downtime be informed to the asset operator?

If the trip was triggered by a fault on the circuits across B6 then the control room will notify the transmission owner and the generator simultaneously immediately after the event.

7. If I am tripped, how long would it take for me to be re-connected back to the system?

In the event of the trip, the ENCC would re-secure the system by carrying out all actions necessary to recover from the fault as per standard procedure. Once this is completed the generator will be reconnected as soon as possible.

8. Will the ESO be providing expected number of hours and timing over the service duration for arming?

In the February 2020 request for information (RFI) pack, the ESO issued communications to say that the B6 constraint will experience congestion anywhere between 1500 and 3000 hours a year. All 800MW of capacity will not need to be armed all the time. The ESO will start with the cheapest provider in the stack of successful tenders in realtime and arm from the cheapest until the volume necessary is met for that system condition.

9. What would happen if a unit was synchronised at the time of arming instruction, but was scheduled to go offline in next or near-future settlement period(s)?

The unit will be considered disarmed from the settlement period it is desynchronised from. If providers are armed when desynchronising, they must notify the ESO that they are unable to provide this service and are going to be disarmed for technical reasons that are within the control of the generator.

10. Will providers have to do anything in the event of a fault or is it solely the responsibility of the TOs to trip the circuit breaker?

Providers will not have to do anything during a fault other than preparing to reconnect once the instruction from the ESO is received. When a fault occurs:

- all actions are to be taken automatically,
- the network fault occurs,
- intertrip scheme picks up the fault and
- triggers the disconnection of armed generators opening TO circuit breakers.

The generator must come to a safe stop after this has happened.

11. Will the ESO be looking at other constraints on the network? For example East and South of England.

Yes, the ESO is trialling this service in Scotland B6 and will be looking at other areas on the system informed by the Commercial Solutions in the Network Options Assessment (NOA).

12. How do the ESO think an arming instruction would affect prior or future balancing mechanism instructions on the same unit?

The control room would make the decision to take action and arm/disarm the unit if it is contracted in the balancing mechanism.